



Unit 20: Business Process Modelling Tools

Delivery guidance

This unit is an optional practical unit that develops learners' business, enterprise and entrepreneurship skills. Learners will need to show an understanding of technology, as they will choose an idea for a new IT-related product or service. While group work is acceptable during unit development and in class activities, the assessment should be done as an individual.

This is, therefore, a good unit for the learners to study if they are considering working for themselves. Even if they are not, it will produce useful skills that also overlap into interview techniques.

Approaching the unit

This unit is an opportunity to acquire knowledge and skills in business process modelling, which is part of the business process reengineering (BPR) methodology.

To understand this as a concept, learners first need to understand how businesses and their processes are structured.

The approach to this unit should be:

- through the use of case studies, which are essential to bring this unit to life. While some links have been given, you should make use of other case studies or relevant news items at your discretion.
- within the context of various business scenarios, for both activities and assessment.

Delivering the learning aims

Learning aim A

Consider mission statements and organisational aims and objectives. You could begin by discussing your centre's mission statement with learners. What does it mean? What does it mean to them? What are the objectives of a centre of education?

Learners will have an opportunity to consider a number of real organisations, and while some are named, these can be replaced with organisations of your choice (or theirs if you prefer).

What is customer satisfaction? How important is service, price and quality on how business processes are structured and work?

Investigating organisations and business structures, sectors and functional areas will allow learners to comment on the internal workings of formal entities. As it is unlikely that they will all have an intimate knowledge of a business as employees, you could use the centre as one of the organisations investigated. Which functional areas does your centre have? Is there an R&D or a manufacturing function? In the case of a school or college, what replaces manufacturing?

Learners will be introduced to business processes by category (management, operational and supporting) and will consider how these interlink to enable the business to operate.



Changing business processes has inherent risks and some of these are explored, along with ways of mitigating the impact of the risk, or risks, on the ongoing operations of the business or organisation.

Learning aim B

The investigation methods used to understand business processes are the same as those used in any project situation and learners will meet these concepts again when undertaking *Unit 9: IT Project Management*.

Formal recording of the investigation should take place using different methods, as appropriate for the situation. This will enable analysis to take place, with problems decomposed to a lower level to aid understanding. Alongside the attributes of the process or processes, the rules that are used in the process will also be defined.

Learners will use business process modelling tools, investigating them as part of the classroom activity and applying them in the assessment.

Learning aim C

In the final learning aim, learners consider where innovation comes from. You will explain to learners that innovation can take many forms (such as improving a service, improving the communication between departments, finding better ways of organising production, etc.).

Formally investigating BPR will bring this unit to a close and learners will consider the impact of this activity by studying the effects of change on an organisation and its stakeholders. Risk and risk mitigation is essential in managing the process change activity.

Throughout the unit, learners will be expected to demonstrate the skills, knowledge and behaviours that will prepare them to be professional practitioners on completion of this qualification. You could use a search engine and the search string "*IT professional behaviours and attitudes*", where you will find a number of links to resources that list the qualities and behaviours expected in the workplace. (Further information is included in the **Resources** section at the end of this guide). Learners should be encouraged to demonstrate these behaviours in both their written and presentation tasks.



Assessment model

Learning aim	Key content areas	Recommended assessment approach
A Investigate the processes that organisations use to support their activities	A1 Business aims and objectives A2 Organisational models and department functions A3 Types of business processes A4 Drivers for change	A report, blog or presentation materials covering business aims and objectives, organisational models, department functions and reasons for change.
B Examine an organisation's business processes and activities to inform improvements	B1 Investigation methods B2 Analysis of a business process B3 Business process modelling tools	Interview recordings, observation statements and documentation providing evidence of the investigation. Annotated diagrams of business processes.
C Develop a plan to improve an organisation's business processes and activities	C1 Sources of innovation to improve business processes C2 Business process redesign and improvement C3 Change management C4 Skills, knowledge and behaviours	Records of discussions covering the analysis of the impact of business process changes. Annotated diagram of the improved business processes. Evidence of feedback (recording of discussions or written feedback). Recorded or written evaluations of the plan and the working practices.



Assessment guidance

The assessment for this internally assessed unit would benefit from being divided into two assignments, as shown above.

Learning aim A

As the formal assessment for this learning aim, learners should create a blog, report or presentation materials covering business aims and objectives, organisational models, department functions and reasons for change. Learners should be able to demonstrate an understanding of these concepts by linking them to real-world examples.

Learners should explain how different types of business processes are used to support the needs of an organisation and how technologies can be used as part of this. To achieve a merit, they should analyse the impact of using business processes, and to achieve a distinction, they should evaluate the effectiveness of technologies used to improve business processes.

Learning aims B and C

This assignment combines learning aims B and C into an investigative project. Learners will produce interview recordings, observation statements and documentation providing evidence of the investigations.

Learners will also create annotated diagrams of business processes, as well as records of discussions covering the analysis of the impact of business process changes (identifying both the positive and negative effects).

An annotated diagram of the improved business processes should be created as it can be used to compare the previous state of the process with its new state.

Evidence of feedback (recording of discussions or written feedback) is essential, and recorded or written evaluations of the plan and the working practices complete the assessment requirements.

To achieve a merit, learners must justify their decisions, evaluating the plan against the model. To achieve a distinction, learners should show how the decisions and processes applied have impacted the effectiveness of their plan to improve the business process. They should review the plan by examining and reflecting on both the positive and negative aspects using realistic examples.



Getting started

This gives you a starting place for one way of delivering the unit, based around the recommended assessment approach in the specification.

Unit 20: Business Process Modelling Tools

Introduction

In order to understand the benefits to business of using IT and technology in their activities, learners must understand basic business concepts. This unit gives an opportunity for learners to develop their knowledge and enables them to make the link between business and technology, exploring how these work together.

Learning aim A – Investigate the processes that organisations use to support their activities

A1: Business aims and objectives

Organisational aims and objectives, mission statements and business goals

- You are going to introduce learners to the concept of business aims and objectives, and the nature and role of business mission statements and goals. Use the eight-minute video listed in the **Resources** (Organisational Objectives in Business Activity) as a focal point to stimulate a class discussion. This should be followed by a Q&A to check understanding.

Importance of service levels, customer satisfaction, quality and pricing

- Initiate a small group activity to investigate why service, customer satisfaction, quality and pricing are important. Learners should search the Internet to find news items about how businesses approach these concepts. The following ideas may help:
 - Which local organisations are the best and worst businesses for customer service? Which companies have a good reputation locally for quality? What do learners think?
 - Why is pricing important? What is the role of price in business success?

Learners should carry out research, and create and present a slide presentation to the class. You could consider allocating a single component to each group, such as price or customer satisfaction. This will give learners more time to focus on a single area and find more examples that they can use to illustrate their findings. This will also mean a wider range of presentation for learners to watch.

A2: Organisational models and department functions

Types of organisation or business

- Produce a table with three columns; one for “Organisation type”, one for “Description” and one for “Examples”. Populate the first column with the categories listed in the specification. Distribute this to learners and then lead a discussion that will enable them to complete the table. They should be able to give examples of businesses in each category, although for a sole trader they may have to rely on the type of job (e.g. plumber or electrician), rather than the name of an actual business.

Industry sectors

- Learners work in pairs to define industry sectors. They should write a definition and



identify real-world examples of companies in each category. They should share their definitions and examples with the class. The industry sectors are as follows:

- Primary
- Secondary
- Tertiary

Department functional areas

- Download an image for “*business functional areas*” that most closely resembles the list (an image link is included in the **Resources** section- a search of Pinterest would be helpful here). Print onto A4 paper and distribute to learners. Learners should take part in a class discussion and annotate the diagram with a description of the basic functions of each of these areas.

How functional areas interlink to support business aims and objectives

- Prepare a presentation that considers how different areas interlink. This should be a top-level presentation only that prepares learners for the next topic.

A3: Types of business processes

Management, operational and supporting processes

- Learners should undertake work in small groups that explores the three key business processes. Learners may use the 38-slide presentation and notes (see link in **Resources** section- Slideplayer.com Chapter 7 Transaction processing, functional applications, CRM and integration) to create teaching resources that they will use to teach the rest of the class. You could split the content (as per the title) into three and allocate a specific area to each group. This will mean that they will have to extract relevant content from the presentation and support it with additional research.

A4: Drivers for change

Reasons why business processes need to change

- Although this part of the specification only lists the reasons why business processes need to change, you should present a balanced view by discussing not only the benefits, but also potential resistance and challenges that business managers could face in trying to implement organisational and process change. This is covered in more depth in learning aim C3 towards the end of the unit. Create and deliver a presentation to cover the content described.



Learning aim B – Examine an organisation's business processes and activities to inform improvements

B1: Investigation methods

Methods used to understand business processes

- Learners work in pairs to research methods used to understand business processes. They should collaborate to create a short podcast or blog that can be uploaded to the centre or course intranet, or even the class social media page, so that it can be shared and viewed by others. Learners should not be restricted to the three methods listed in the specification, and you could encourage them to carry out additional research and add additional methods. For example, could a questionnaire be used as a method for gaining information about business processes? The completed podcasts should be viewed and critiqued by the class.

Methods of recording the details of processes

- Observing processes as they happen can be a useful tool in understanding business processes. For this activity, learners should work in threes. Each team will investigate the same process (just one from the list below, or an alternative you decide to include).
 - Organise four business/organisational activities for learners to observe for five minutes. These could be:
 - your centre's receptionist processing a visitor
 - an IT technician responding to and repairing a fault or carrying out an upgrade
 - a member of your centre's web development team making changes to the centre's website
 - a member of the accounting team processing incoming invoices.
- During the observation, learners are not allowed to interact with the process. A video recording and audio recording of the process should be made, and the third learner should take notes.
- Please note: the number of activities suggested is assuming that you have a class of about 12 (four groups of three). You could use fewer or more as appropriate.
- Following this activity, learners should compare the three recordings and answer a series of questions.
 - 1) Which process was the best for capturing the most detail?
 - 2) What are the advantages of each method?
 - 3) What are the disadvantages of each method?
 - 4) Might any of the other methods studied have given additional information? Which methods and how?
- Learners should write down the inputs, processes and outputs of the activity they observed.

B2: Analysis of a business process

The purpose and nature of the business process including inputs, outputs and process attributes



- Deliver a presentation that focuses on business processes and the different forms they take, for example, paper-based records for recording accounting activity, physical activities such as adding items or removing them from stock, IT-based manufacturing systems such as CAD/CAM.
- Lead a class discussion asking learners about inputs, processes and outputs, linking this back to any programming units they may have studied. Discuss process attributes (these are all the components required for the process – for example, the attributes of a calculation are the data items used and the arithmetic operators).

Decomposition

- Define decomposition and the concept of the sub-process and explain how rules apply (decision points).
- Learners investigate decomposition in pairs using the link given in the **Resources** section (Toolbox.com- Guidelines for decomposing business functions and processes) in this document. The guide gives hints and tips on how to undertake this activity. Learners should create a checklist or some other aide memoir.

Individual activities of processes, rules and decision making

- Give at least four different business processes for learners to decompose. Learners should work in pairs to break down the process into its inputs, processes and outputs, identifying the attributes of the process and any rules that apply.

B3: Business process modelling tools

Tools used to model business processes

- A guest speaker could be invited to explain how they use business modelling tools in their job role. They should give examples of these documents for learners to view and ask questions about.
- Develop this topic further by asking learners to work in pairs and choose two of the four modelling tools to investigate. Each pair should create a guide to the modelling tools they have chosen. The completed guides should be presented (talked through, not a formal presentation) to the class and should be shared by all members of the class.



Learning aim C – Develop a plan to improve an organisation's business processes and activities

C1: Sources of innovation to improve business processes

- Begin with a class discussion. What is innovation? Allow learners to give examples. The examples they give may well be limited to new technologies (such as wearable devices) or new services (such as video streaming) that they have come into contact with. Explain to learners that innovation can take many forms (such as improving a service, improving the communication between departments, and finding better ways of organising production).
- Deliver a presentation on sources of innovation. Where does innovation come from? The specification suggests four potential sources, but this list is not exhaustive and you can add some of your own.

Problem solving and idea creation methods

- Lead a class discussion about mind mapping. Discuss the pros (can take ideas in new and unexpected directions) and cons (can be a poor use of time, can end up with too much information to manage, can lack control) of this method for problem solving and idea creation.
- Work in small groups to investigate cause and effect diagrams (also known as Fishbone or Ishikawa diagrams). These are used in many analytical methodologies, for example, 'root cause analysis'. What is a cause and effect diagram? What is it used for? A link to a video has been given in the **Resources** list.
- Learners interpret a fishbone diagram (links to two IT-specific examples have been given), before creating a diagram based on a case study you will give. The final two minutes set out an exercise that you could use and adapt as a problem for your learners to solve.

C2: Business process redesign and improvement

Business process reengineering (BPR)

- Introduce the concept of BPR (as a component of continuous business improvement) through a discussion about the reasons why business processes need to be analysed, redesigned, implemented and tested (e.g. to realign business processes to altered objectives, to make use of new technologies, meet new demands from stakeholders, such as changes in legislation or environmental considerations). This can be achieved through a presentation or discussion.
- Learners watch the BPR Case Studies video (see links in **Resources** section), taking notes. You will need to pre-watch the video and set up some questions that you will be able to use in the subsequent class discussion.

Use of technologies that can support process change

- Class discussion, brainstorming available technologies that can contribute to the process of change. While some are listed in the specification, there are many more that could be suggested. For example, the introduction of Sharepoint to support the change process or the use of technologies that allow users to collaborate and co-edit documents in real time. Learners should create a single A3 or A2 poster as a class that can be placed on the classroom wall as an aide memoir. The poster should identify a range of technologies, giving ideas on how each one could potentially be used.



C3: Change management

The effects of change on an organisation

- Pose a question to start a class discussion. In 2002, Dyson moved manufacturing operations from the UK to Malaysia. Ask learners to investigate and answer:
 - What were the benefits for Dyson?
 - What was the impact of this on staffing?
 - What was the impact on resources?
 - How were customers affected?
 - Was there an impact on the local economies in the UK and in Malaysia?

Learner research should go beyond the single link given in the **Resources** section.

Once the investigation has been completed, you should lead a discussion on the actions of Dyson.

Process change risks and risk mitigation

- You will give a scenario/case study that allows learners to work in pairs or small groups to prepare briefing documents or a presentation that will initially reassure staff about impending business process change. This presentation should itself be presented to senior managers of the business, as part of a leadership team briefing. It should include coverage of the risks that will be present during process change and suggest how some of these risks could be mitigated. The senior managers should be left in no doubt about the nature and extent of the potential risks, and learners should show that they have considered mitigating as many as possible, also highlighting those where there is the greatest challenge.

C4: Skills, knowledge and behaviours

For this unit, learners will demonstrate an understanding of the skills knowledge and behaviours that would need to be displayed as part of a business process remodeling activity.

Some or all of these skills have been covered in early units in this course (such as Units 3, 4, 5 and 6, among others). For this reason, no new content will be added here.

Learners should apply the skills learned in other units in this context. They will need to demonstrate continued professionalism, planning and recording skills and evaluate outcomes in the same way as in other units. This will be demonstrated in the quality of both their written and verbal work.

Particularly important, in the context of this unit, is the process of evaluation and ensuring that learners can fully justify their recommendations, decisions and approach taken to the tasks.

They should ensure that they demonstrate appropriate communication skills and are able to convey their meaning clearly, using appropriate tone and language, and respond constructively to contributions of others.



Details of links to other BTEC units and qualifications, and to other relevant units/qualifications

Depending on the choice of project, the following units will give useful underpinning knowledge and skills that can be drawn on to create the deliverables:

- *Unit 2: Creating Systems to Manage Information*
- *Unit 5: Data Modelling*
- *Unit 14: Customising and Integrating Applications*
- *Unit 19: Enterprise in IT*

Resources

In addition to the resources listed below, publishers are likely to produce Pearson-endorsed textbooks that support this unit of the BTEC International Level 3 Qualifications in Information Technology. Check the Pearson website at <http://qualifications.pearson.com/endorsed-resources> for more information as titles achieve endorsement.

Videos

YouTube:

Search using the below terms to find relevant videos.

- *BPR case studies*
- *Cause and effect analysis*
- *Decision tables*
- *How to draw a UML "use case diagram"*
- *Organisational objectives in business activity*
- *Problem solving techniques #8: flow charts*
- *Process mapping*
- *UML 2.0 activity diagrams*



Websites

- Go to the *'Sword Active Risk'* website and search *'Why risk management?'*
- Go to the *'Forbes'* website and search *'The world's most reputable companies'*
- Go to Toolbox.com's tech page and search *'Guidelines for decomposing business functions and processes'*
- On the *'BBC News'* website search *'Dyson to move to Far East'*
- On Slideplayer.com search *'Chapter 7 – Transaction processing, functional applications, CRM and integration'*
- On the *'Tools for Educators'* website search for *'Domino maker'*
- On Pinterest search *'Business functional areas'*
- Using a search engine search for *'12 professional behavior tips'*, or *'professional values'*, or *'10 characteristics of professionalism in the workplace'*

Fishbone diagrams for interpretation

- Page 5 of the *'Wedandnewmedia'* tumblr page
- On the *'Techtarget'* website search *'What is a fishbone diagram?'*

Pearson is not responsible for the content of any external internet sites. It is essential for teachers to preview each website before using it in class so as to ensure that the URL is still accurate, relevant and appropriate. We suggest that teachers bookmark useful websites and consider enabling learners to access them through the school/college intranet.